

DISCUSSION OF THE AMENDMENT

Claim 2 has been amended by correcting a spelling error.

No new matter is believed to have been added by the above amendment. Claims 1-6 and 8-13 remain pending in the application.

REMARKS

Applicants thank the Examiner for the courtesy extended to Applicants' attorney during the interview held February 7, 2006, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art, and discussed other issues raised in the Office Action. The discussion is summarized and expanded upon below.

The rejection of Claims 1-13 under 35 U.S.C. § 103(a) as unpatentable over EP 1 041 102 A1 (Kondou et al) taken with U.S. 3,112,982 (Hinckley), U.S. 4,244,690 (Sato et al) or U.S. 6,797,015 (Blumenberg et al), is respectfully traversed.

As disclosed in the specification under "Description of the Related Art, beginning at page 1, line 17, molded products of a variety of resin compositions with colored short fibers have been marketed, but except for some applications, have surfaces poor in durability such as heat resistance and weatherability. Colored short cellulosic fibers are useful for resin compositions, because such fibers undergo neither melting nor softening and shrinkage, even when heated. However, they are also accompanied by drawbacks, such as being poor in heat discoloration resistance, so that the fibers themselves undergo yellowing or browning at a molding temperature as low as 220°C or so. Cellulosic short fibers dyed with general-purpose dyes are not sufficient in both heat discoloration resistance and weatherability. Resin compositions which contain colored short cellulosic fibers mass-colored with a pigment are themselves problematical for reasons described.

As recited in Claim 1, the invention is a resin composition comprising a matrix resin and short cellulosic fibers dyed with at least one threne dye, wherein said threne dye is selected from the group consisting of C.I. Vat Red 10, C.I. Vat Blue 14, C.I. Vat Brown 1, C.I. Vat Orange 2, C.I. Vat Green 1, C.I. Vat Yellow 22, C.I. Vat Violet 1, C.I. Vat Yellow 48 and C.I. Vat Black.

As Applicants' attorney noted during the above-referenced interview, Applicants have acknowledged the known affinity of threne dyes to cellulosic fibers and their excellent fastness properties. However, the prior art does not appreciate the improvement obtained with threne dyes, and particularly the above-recited threne dyes, compared to other types of dyes known to be useful to dye cellulosic fibers, when used in the environment of the present invention, i.e., as dyed short cellulosic fibers in a matrix resin to be molded.

The Yamaguchi Declaration filed March 14, 2005 (first Yamaguchi Declaration) demonstrates that threne dyes provide heat discoloration resistance and weatherability that is superior to a particular direct dye and a particular reactive dye, both of which types of dyes have been disclosed for dyeing cellulosic fibers. Such superiority could not have been predicted by the applied prior art.

The Yamaguchi Declaration filed October 17, 2005 (second Yamaguchi Declaration) demonstrates that there is a difference among threne dyes *per se*. The second Yamaguchi Declaration measures the ability of various threne dyes of compensating insufficient heat discoloration resistance of cellulosic fibers themselves, and demonstrates that such capability varies depending on the particular threne dye used. Thus, contrary to the finding by the Examiner, threne dyes are **not** all equivalent in capability.

Kondou et al is drawn to a resin composition for a non-woven fabric-like design which comprises fiber piles of carbonized polyacrylonitrile having a nitrogen content of 10% by weight or more and/or fiber piles of viscose rayon mass-colored with pigments [0008], wherein the fiber piles are uniformly dispersed in a matrix resin, pelletized, mixed with pellets of an uncolored resin, and then molded [0009]. The content of the pigments in the colored fiber piles of viscose rayon is preferably 0.01 to 50% by weight, more preferably 0.1 to 5% by weight and most preferably 2 to 3% by weight [0010]. Among the pigments disclosed as useful are inorganic pigments and organic pigments, wherein "anthraquinone" is

listed, *inter alia*, as an organic pigment [0011]. Kondou et al discloses further that it is possible to color the viscose rayon fiber with a dye but that fiber piles of viscose colored with a dye are inferior to such fiber piles colored with pigments [0012]. Indeed, Kondou et al discloses that fiber piles of viscose rayon colored with a dye may be used in a small amount if used with corresponding fibers colored with pigments, but that it is preferable that fiber piles of viscose rayon colored with a dye not be used from the standpoint of heat resistance and weatherability [0014]. Thus, as Applicants' attorney noted during the above-referenced interview, Kondou et al actually teaches away from the present invention.

Hinckley, Sato et al, and Blumenberg et al disclose nothing more than what Applicants have already acknowledged, i.e., that threne dyes have been used to dye cellulosic fibers. But none of these references discloses such dyes cellulosic fibers with a matrix resin to be molded. Moreover, while the references may disclose the specific threne dyes recited in the present claims, Hinckley also discloses C.I. Vat Blue 18 (column 2, line 27) and C.I. Vat Yellow 2 (column 2, line 35), which dyes have been shown in the second Yamaguchi Declaration to be inferior to the dyes recited in the present claims. Thus, the dyes of the present claims received a grade of "A", indicating that samples according to paragraph 7 of the second Yamaguchi Declaration passed the color difference test described therein; the comparative threne dyes, such as those discussed above and disclosed in Hinckley, received a grade of "C", meaning they failed the color difference test.

In the Office Action, the Examiner has criticized the second Yamaguchi Declaration, "since all dyes recited in claim 1 were not compared with any substantial number of alternative dyes. Too little evidence is presented to make any such sweeping conclusions as proffered by counsel that 'threne dyes provide heat discoloration resistance and weatherability that is superior to a particular direct dye and a particular reactive dye.' Nothing in the claims is drawn to either feature. The Declaration is not deemed to be

supportive of patentability as drawn to any particular threne dyes employed and recited herein.”

In reply, Applicants respectfully submit that it is not significant that they have not exemplified all of the threne dyes within the terms of the broadest claims herein, because the Examiner has not made out a *prima facie* case of obviousness. (Applicants have exemplified all of the threne dyes recited in Claim 13; this claim is thus separately patentable.) Indeed, as discussed above, Kondou et al actually teach away from the use of a dye, as opposed to a pigment, to color their fiber piles. Moreover, Kondou et al discloses **no** particular dyes, noting that the disclosure of “anthraquinone” in Kondou et al is with regard to anthraquinone pigments, not dyes. It is submitted, then, that it is only with the present disclosure as a guide that one skilled in the art would choose the particular threne dyes of the present claims.

Claim 8 is separately patentable, as Applicants’ attorney noted during the above-referenced interview, based on the comparative data in the specification¹ which shows that when the concentration of the threne dye is from 7 to 15 wt.% based on the short cellulosic fibers, various improved properties result, and that the prior art does not appreciate that the amount of threne dye based on the short cellulosic fibers, is a result-effective variable. Note that Kondou et al, although the disclosed percentage range therein is of pigments, not dyes, most preferably desires a 2 to 3 wt.% range, as discussed above.

For all the above reasons, it is respectfully requested that the rejection over prior art be withdrawn.

Applicants acknowledge the Examiner’s withdrawal of the requirement of a substitute specification, and the withdrawal of the objection to the Abstract of the Disclosure, as reflected in the Interview Summary corresponding to the above-referenced interview.

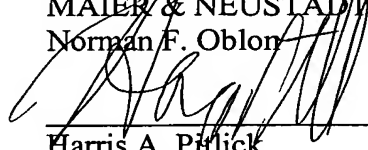
¹ It is the comparative data in the specification, not in the First Yamaguchi Declaration (as erroneously stated in the Interview Summary), that is relied on for the separate patentability of Claim 8.

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All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Harris A. Pitlick
Registration No. 38,779

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)
NFO/HAP/cja